

What is claimed is:

[Claim 1] 1. A chemical mechanical polishing process comprising:
providing a substrate having thereon a top bulk metal layer and a lower barrier layer;
polishing said top bulk metal layer at a substantial constant removal rate to expose said barrier layer by utilizing a first platen and a first slurry being selective to said barrier layer; and
polishing said exposed barrier layer by using a second platen and a second slurry.

[Claim 2] 2. The chemical mechanical polishing process according to claim 1 wherein said first slurry has a copper to barrier polishing selectivity of greater than 30.

[Claim 3] 3. The chemical mechanical polishing process according to claim 2 wherein said first slurry has a copper to barrier polishing selectivity of above 100.

[Claim 4] 4. The chemical mechanical polishing process according to claim 1 wherein said first slurry contains alumina.

[Claim 5] 5. The chemical mechanical polishing process according to claim 1 wherein said second slurry contains alumina.

[Claim 6] 6. The chemical mechanical polishing process according to claim 1 wherein said first slurry contains silica.

[Claim 7] 7. The chemical mechanical polishing process according to claim 1 wherein said second slurry contains silica.

